

REMARKS

Claims 7-8, 16-17, and 24-25 have been objected to because two lower adhesion layers were recited. Claims 7-8, 16-17, and 24-25 have been amended to recite a lower adhesion layer and an upper adhesion layer as suggested by the Examiner. Withdrawal of this objection is respectfully requested.

Claims 1-6, 8-9, 11-15, 17-18, 20-23 and 25 have been rejected pursuant to 35 U.S.C. §103(a) as obvious over Hawley et al., in view of Jain et al. and further in view of Gangopadhyay. This rejection is respectfully traversed.

First, as demonstrated by the accompanying Declaration of inventor Frank Hawley, the Examiner is incorrect in assuming that the fact that SiN functions as an adhesion layer for amorphous silicon would render obvious the use of SiN as an adhesion layer for amorphous carbon. The fact that a specific material functions as an adhesion layer for one material does not imply that it also functions as an adhesion layer for a different material. Therefore, the fact that SiN functions as an adhesion layer for amorphous silicon does not imply that it would function as an adhesion layer for amorphous carbon.

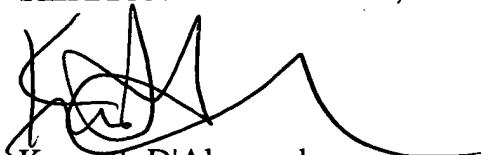
In addition, and as also demonstrated by the accompanying Declaration of inventor Frank Hawley, the use of the particular combination of materials recited in the pending claims results in an antifuse having unexpectedly superior properties. An antifuse formed as recited in the pending claims has significant unobvious and superior properties when compared with prior-art antifuses. First, such an antifuse is more reliable because it does not switch (i.e., revert back to its unprogrammed state) as do prior-art

antifuses such as are disclosed in my prior patent. This is a critically important property for use in a product. Second, the antifuse as claimed in the pending claims of the instant application programs using a current of only about 1 mA, as opposed to the prior-art antifuses which require currents on the order of between about 5-25 mA to program. The significantly lower programming current of the antifuse of the present invention enables the design of a smaller product because the programming transistors can be made using smaller geometries.

These properties of the antifuse as recited the pending claims are unexpected and would not be suggested by any of the prior art. They allow for a smaller and more reliable product, which thus has a much greater value and utility than products employing prior-art antifuses.

If the Examiner has any questions regarding this application or this response, the Examiner is requested to telephone the undersigned at 775-586-9500.

Respectfully submitted,
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